REMARKS

By this amendment, claim 44 has been cancelled, claims 10 and 40, 42, 43, 45 and 46 have been amended and claims 47-52 have been added. Claims 1-9 and 14-39 have been previously withdrawn and claim 41 has been previously cancelled. Accordingly, claims 10-13, 40, 42, 43 and 45-52 are currently pending in the application, of which claims 10, 40 and 49 are independent claims.

In view of the above amendments and the following Remarks, Applicants respectfully request reconsideration and timely withdrawal of the pending objections and rejections for the reasons discussed below.

Rejections Under 35 U.S.C. §102

Claims 10, 13, 40, 42, 44 and 45 stand rejected under 35 U.S.C. §102(e) as being anticipated by U. S. Patent No. 6,278,502 issued to Colgan, *et al.* ("Colgan"). Applicants respectfully traverses this rejection for at least the following reasons.

With respect to claims 10 and 13, amended independent claim 10 recites:

> "10. A contact structure of a wire, comprising:
> a wire formed of *aluminum*;
> an inorganic insulating layer covering the wire and having a contact hole exposing the wire; and
> a conductive layer formed of *indium zinc oxide (IZO)* on the insulating layer and *connected to and directly contacting the wire* through the contact hole"

In other words, the indium zinc oxide layer is connected to and directly contacting the aluminum wire via the contact hole formed in the inorganic insulating layer.

As mentioned in the background portion of the specification, "bad physical and chemical properties of the aluminum or aluminum alloy easily oxides an corrodes the aluminum or aluminum alloy, when contacting other conductive material in a contact portion" (page, 1, lines 11-14). The present invention solves this problem.

In this regard, Colgan describes "Gate metal 110 may include aluminum or copper or an alloy thereof, and *preferably includes* ***a cap 111*** *which may include a metal such as molybdenum*" (column 5, lines 48-50). This means that Colgan acknowledges that it is not desirable to form a direct contact between the aluminum gate metal 110 and the transparent layer 134. To solve this problem, Colgan is suggesting forming the cap 111 formed of molybdenum on the aluminum gate metal 110.

Thus, Colgan is directed to *avoiding* the direct contact between the aluminum gate metal 110 and the transparent layer 134. Contrarily, as mentioned above, the claimed invention is directed to forming a direct contact between an aluminum wire and an indium zinc oxide (IZO) layer without any layer therebetween. Colgan is absolutely silent as to how to enable the direct contact between the aluminum gate metal and the capacitor electrode portion 134 of the transparent layer 131.

For these reasons, it is submitted that claim 10 is patentably distinguishable over Colgan. Claim 13 that is dependent from claim 10 would be also patentable at least for the same reason.

With respect to claims 40, 42, 44 and 45, in this response, independent claim 40 has been amended by incorporating the limitations of claim 44, which is now cancelled. Amended claim 40 recites:

> "40. A thin film transistor (TFT) array panel, comprising:
>
> ...
>
> a data wire formed of *aluminum* on the gate insulating layer and the semiconductor layer;
>
> ...
>
> a transparent conductive layer formed of *indium zinc oxide (IZO)* directly contacting and connected to the data wire through the passivation layer."

As previously mentioned, Colgan is directed to avoiding any direct contact between the aluminum gate wire 110 and the transparent 134. Contrarily, claim 40 is directed to forming a direct contact between the aluminum data wire and the IZO transparent conductive layer. Thus, it is submitted that Colgan does not teach the invention defined in claim 40.

Also, in Colgan, there is no connection or direct contact between the transparent layer 134 and the data wire 118. Thus, Colgan fails to disclose or suggest "a transparent conductive layer ... directly contacting and connected to ***the data wire*** ...", as claimed.

For these reasons, it is submitted that claim 40 is patentable over Colgan. Claims 42 and 45 that are dependent from claim 40 would be also patentable at least for the same reasons.

Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. §102(e) rejection of claims 10, 13, 40, 42 and 45.

Rejections Under 35 U.S.C. §103

Claims 11, 12, 43 and 46 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Colgan in view of Silicon Processing For The VLSI Era by Wolf, *et al.* ("Wolf"). Applicants respectfully traverse this rejection for at least the following reasons.

Claims 11 and 12 are dependent from claim 10. As previously mentioned, claim 10 is believed to be patentable over Colgan. For example, Colgan fails to disclose or suggest forming direct contact between an aluminum layer and a transparent layer.

Wolf discloses "Silicon nitride is highly suitable as a passivation layer ..." (Page 191). However, Wolf does not disclose or suggest forming direct contact between an aluminum layer and a transparent layer. Wolf fails to cure the deficiency from Colgan. Thus, independent claims 10 and 40 are patentably distinctive over Colgan and Wolf.

Regarding claim 40, as previously mentioned, Colgan fails to disclose or suggest "a transparent conductive layer ... directly contacting and connected to ***the data wire*** ...", as claimed. This deficiency is not cured by Colgan.

For these reasons, it is submitted that claims 10 and 40 are patentable over Colgan and Wolf. Claims 11, 12, 43 and 46 that are dependent from claims 10 and 40 would be also patentable at least for the same reason. Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. §103(a) rejection of claims 11, 12, 43 and 46.

Added Claims

Claims 47-55 have been added, of which claim 49 is independent. Claim 54 is dependent from claim 10, which is believed to be patentable. Claims 47, 48 and 55 are dependent from

claim 40. As mentioned above, amended claim 40 is believed to be patentable from Colgan and Wolf. Thus, claims 47 and 48 are believed to be also patentable at least for the same reason.

Independent claim 49 recites "a transparent conductive layer having a first pattern directly contacting and connected to the gate pad through the gate insulating layer and a second pattern directly contacting and connected to the drain electrode through the passivation layer". Neither Colgan nor Wolf discloses this claimed feature. Thus, it is submitted that claim 49 is patentable over them. Claims 50-53 that are dependent from claim 49 would be also patentable at least for the same reason.

Other Matters

In addition to the amendments to the claims mentioned above, the claims have been amended for the purposes of clarification or better wording. Also, amendments have been made to certain claims for deleting limitations that appear to be unnecessary to patentability thereof.

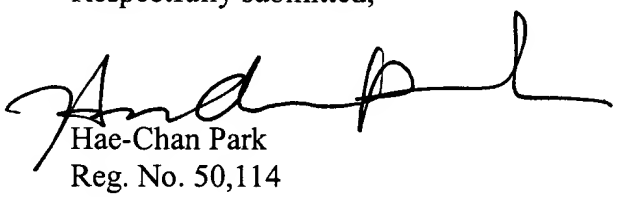
CONCLUSION

Applicants believe that a full and complete response has been made to the pending Office Action and respectfully submit that all of the stated grounds for rejection have been overcome or rendered moot. Accordingly, Applicants respectfully submit that all pending claims are allowable and that the application is in condition for allowance.

Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact the Applicant's undersigned representative at the number below to expedite prosecution.

Prompt and favorable consideration of this Reply is respectfully requested.

Respectfully submitted,



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